AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claims 1-56 (Canceled)

57. (Currently amended) A high-throughput method for screening one or more test compounds to identify those that exert an effect on post-translational modification of a polypeptide [an intracellular biological or chemical process], the method comprising steps of:

a. introducing into each of a plurality of reaction vessels:

a plurality of cells; and

one or more test compounds whose effect on post-translational modification of a polypeptide [an intracellular biological or chemical process] is to be evaluated;

b. introducing into [each] at least some of the reaction vessels an antibody characterized in that it associates intracellularly with a biological component whose presence or amount reveals the effect of a given test compound on post-translational modification of the polypeptide [the biological or chemical process], the introducing being performed under conditions and for a time sufficient that the antibody enters one or more cells and associates intracellularly with the biological component; and

c. assaying for association between the antibody and the biological component in the reaction vessels to assess the presence or amount of the biological component, thereby revealing the effect of the test compound on the post-translational modification of the polypeptide [biological or chemical process];

wherein the plurality of reaction vessels comprises at least 96 reaction vessels.

58. (Currently amended) A high-throughput method for obtaining a functional fingerprint of one or more test compounds; said method comprising steps of:

a. introducing into each of a plurality of reaction vessels:

a plurality of cells; and

one or more test compounds whose effects on a plurality of [intracellular biological or chemical processes] post-translational modification events of polypeptides are to be recorded as a functional fingerprint;

b. introducing into [each] at least some of the reaction vessels an antibody characterized in that it associates intracellularly with a biological component whose presence or amount reveals the effect of a given test compound on a given polypeptide post-translational modification event [biological or chemical process]; the introducing being performed under conditions and for a time sufficient that the antibody enters one or more cells and associates intracellularly with the biological component; wherein a plurality of antibodies are introduced into distinct reaction vessels for detection of a plurality of post-translational modification events;

c. assaying for association between the antibody and the biological component in each reaction vessel to assess the presence or amount of the biological component, thereby revealing the effect of the test compound on the given [biological or chemical process] polypeptide post-translational modification event; and

[h]d.–recording the effects of each test compound on the plurality of [intracellular biological or chemical processes] post-translational modification events of polypeptides, thereby establishing a functional fingerprint for each test compound;

wherein the plurality of reaction vessels comprises at least 96 reaction vessels.

59. (Previously presented) The method of claim 57 or 58 further comprising the step of removing unassociated antibody from each reaction vessel.

60. (Canceled)

61. (Canceled)

62. (Canceled)

63. (Previously presented) The method of claim 57 or 58 wherein the antibody is conjugated to horseradish peroxidase.

64. (Previously presented) The method of claim 57 or 58 wherein the method further comprises introducing a secondary ligand that binds specifically to said antibody, and wherein the step of assaying comprises assaying for bound secondary ligand.

65. (Canceled)

66. (Previously presented) The method of claim 64 wherein in the step of assaying, the secondary ligand is assayed intracellularly.

67. (Previously presented) The method of claim 64 wherein the secondary ligand is an antibody.

68. (Previously presented) The method of claim 67 wherein the antibody is conjugated to horseradish peroxidase.

69. (Previously presented) The method of claim 57 or 58 wherein the step of assaying utilizes a detection technique selected from the group consisting of: chemiluminescence, fluorescence, phosphorescence, radioactivity, colorimetry, Ultra-Violet spectroscopy, and Infra-Red spectroscopy.

70. (Canceled)

71. (Previously presented) The method of claim 57 or 58 wherein, in the step of introducing the cells in each of the plurality of reaction vessels, the cells adhere to the reaction vessel surface.

72. (Canceled)

73. (Canceled).

74. (Canceled).

75. (Canceled).

76. (Presently amended) The method of claim 57 or 58 wherein the [intracellular biological or chemical process] post-translational modification is a covalent modification of an intracellular polypeptide [component].

77. (Previously presented) The method of claim 76 wherein the covalent modification is an intracellular biological reaction.

78. (Canceled).

79. (Canceled).

80. (Presently amended) The method of claim [79] 76 wherein the post-translational [event] modification is [protein] glycosylation, methylation, lipidation, isoprenylation, ubiquitination, phosphorylation or acetylation.

81. (Canceled).

82. (Canceled)

83. (Previously presented) The method of claim 57 or 58 wherein the cells are from the same cell –line.

84. (Canceled).

85. (Previously presented) The method of claim 57 or 58 wherein at least a subset of the cells comprises a eukaryotic cell.

86. (Previously presented) The method of claim 57 or 58 wherein at least a subset of the cells comprises a mammalian cell.

87. (Previously presented) The method of claim 57 or 58 wherein at least a subset of the cells comprises a human cell.

88. (Previously presented) The method of claim 57 or 58 wherein at least one test compound is from a synthetic source.

89. (Previously presented) The method of claim 88 wherein the test compounds are from a combinatorial library.

90. (Previously presented) The method of claim 89 wherein the test compounds are covalently bound on a solid support, the method further comprising the step of dissociating the test compounds from the solid support.

91. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are designed to receive a volume of liquid less or equal to approximately 200 microliters.

92. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are designed to receive a volume of liquid less or equal to approximately 50 microliters.

93. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are designed to receive a volume of liquid less or equal to approximately 2 microliters.

94. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are designed to receive a volume of liquid less or equal to approximately 250 nanoliters.

95. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are arranged in a two-dimensional array with sufficient density that the center-to-center distance between adjacent vessels is less than about 8.5 millimeters.

96. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are arranged in a two-dimensional array with sufficient density that the center-to-center distance between adjacent vessels is less than about 4.5 millimeters.

97. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are arranged in a two-dimensional array with sufficient density that the center-to-center distance between adjacent vessels is less than about 2.25 millimeters.

98. (Previously presented) The method of claim 57 or 58 wherein the reaction vessels are arranged in a two-dimensional array with sufficient density that the center-to-center distance between adjacent vessels is less than about 1 millimeter.

99. (Previously presented) The method of claim 57 or 58 wherein the number of reaction vessels is greater than or equal to approximately 384 and the reaction vessels occupy a surface smaller than or equal to approximately 128×86 mm^2.

100. (Previously presented) The method of claim 57 or 58 wherein the number of reaction vessels is greater than or equal to approximately 1500 and the reaction vessels occupy a surface smaller than or equal to approximately 128×86 mm^2.

101. (Previously presented) The method of claim 57 or 58 wherein the number of reaction vessels is greater than or equal to approximately 6000 and the reaction vessels occupy a surface smaller than or equal to approximately 128×86 mm^2.

102. (Previously presented) The method of claim 57 or 58 wherein in the step of introducing the test compounds into the plurality of reaction vessels, the test compounds are the same or different.

103. (Previously presented) The method of claim 57 or 58 wherein in the step of introducing the test compounds into the plurality of reaction vessels, each reaction vessel contains one test compound.

104. (Previously presented) The method of claim 57 or 58 wherein at least one test compound is from a natural source.

105. (Withdrawn) The method of claim 58 wherein the reaction vessels are wells of a 96-, 384-, 1536- or 6144-well plate.

106. (Withdrawn) The method of claim 105 wherein the same test compound is introduced in each of the wells and a different antibody is introduced in each well.

107. (Withdrawn) The method of claim 105 wherein a the same test compound and a different antibody are introduced in each well across a row, and a different test compound and the same antibody are introduced in each well down a column.

108. (New) The method of claim 57, wherein the antibody associates intracellularly with the polypeptide after post-translational modification.

109. (New) The method of claim 57, wherein the antibody associates intracellularly with the polypeptide prior to posttranslational modification.

110. (New) The method of claim 57 or 58 wherein the step of assaying utilizes chemiluminescence.